GEOGRAPHIC NEWS BULLETIN

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NOTE TO TEACHERS

Many requests for the Geographic News Bulletin were made for the year ending with the January 29, 1923, issue. If you desire the Bulletins continued kindly notify The Society promptly. The attached form may be used:

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The Geographic News Bulletin is published weekly throughout the school year (thirty issues) and will be mailed to teachers for one year upon receipt of 25 cents (in stamps or money order). Entered as second-class matter, January 27, 1922, at the Post Office at Washington, D. C., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized February 9, 1922.

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The Ruhr: Germany's Valley of Coal and Steel

FROM the discussions about the Ruhr Valley, of western Germany, one acquires the idea that the Ruhr must, indeed, be an important river. Far from it.

The Ruhr River itself is an inconspicuous stream, hardly more than a hundred miles long, with little volume of water, and navigable even with the aid of its eleven locks for only forty-three miles. But its valley and the rolling country to the north for a few miles, to which it has given its name, is a region of concentrated industrialism. There, in a district roughly 40 by 10 miles, has been developed the greatest coal production in Europe. And with iron ore available from the nearby former "German Lorraine" and Luxemburg, there sprang up the industry of fabricating iron and steel which went further perhaps than any other activity toward building up the mighty German Empire of 1913, and gave a literal significance to Bismarck's ideal for a country of "blood and iron."

Railroads Show Ruhr's Importance

One could pick out the oval of the Ruhr region on a map of Germany by its railroads. Germany's steel highways form a relatively close net-work over the entire country, but in the Ruhr region the lines draw together into a fine screen showing unmistakably the hive of industry that this district has come to be.

The solar plexus of the Ruhr district is Essen, known far and wide as the home of the great Krupp gun and armor plate factories. In prominent places in the city stand statues to Bismarck and Alfred Krupp—the man who laid the foundations for Germany's powerful fighting machine, and the man who equipped it and became tremendously wealthy in the process.

Krupp really made Essen almost as truly as the United States Steel Corporation made Gary, Indiana. The town was founded in the 9th century, but as late as 1854 it was little more than a village with 10,500 inhabitants. Before the World War it had grown to be a city of 300,000, and of these nearly 50,000 were employed in the Krupp works. From 1914 to 1918 when Germany was putting forth every effort to produce more and more war supplies, the population of Essen had a war addition of 100,000 or more.

With the development of Essen as a steel and iron center hundreds of other establishments joined the Krupps until the environs of the city are now a forest of chimneys. Near Essen, too, are many coal pits.

Big Cities Elbow One Another

But while Essen is the center of "the Ruhr" it by no means monopolizes its business. Big cities are thick in this area. Entering the region at Duisburg, its gate-city, with 230,000 inhabitants, by a journey of less than five miles one reaches Oberhausen, with a population of 90,000. Three miles farther is Mulheim with 112,000, five miles away Essen with 300,000, and four miles farther Gelsenkirchen with 170,000.

By an advance of another four miles into the Ruhr one reaches Bochum,

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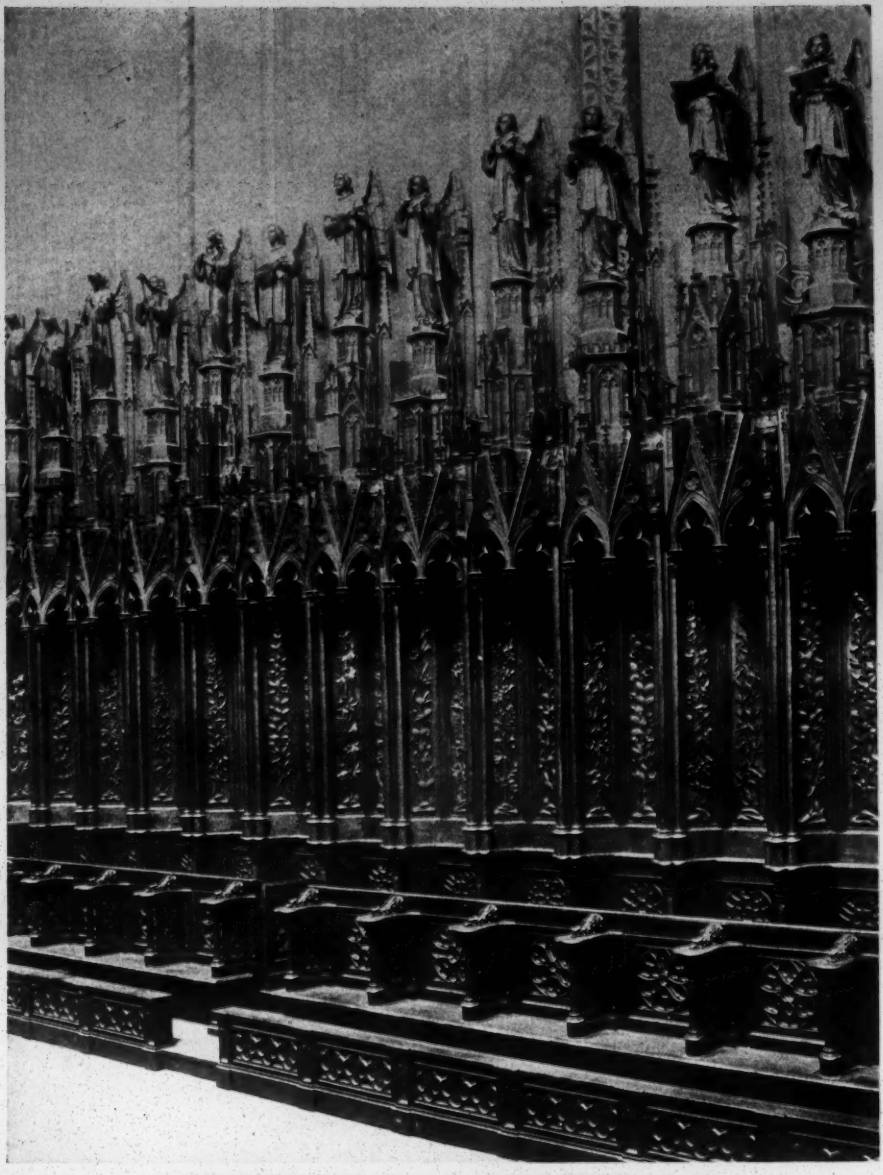

MAGNIFICENT CHOIR STALLS IN KRAKOW (See Bulletin No. 5.)

The superb canopy above the back stalls, filled with a multiplicity of symbolic detail and suggesting the guidance of an angelic choir, frames the composition with an exquisite embroidery much more rich and much more tedious in accomplishment than any which could be worked in fabric. This canopy consists of cathedral towers, each tower surmounted by a heavenly chorister or an accompanist. Between the cathedral detail and surmounting the pillars of the stalls are figures of the church's historic nobility.

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Trees Help Outline American History

LIVING trees and cut timbers may become the mute calendars of much of the undated pre-Columbian history of North America, as the result of a new means of time determination to be first applied to the study of the Chaco Canyon ruins, explored by the National Geographic Society.

Of the accomplished people who built the remarkable communal dwellings in northwestern New Mexico, developed a relatively high civilization and left traces of marvelous engineering feats and exquisite art objects, it has been said regretfully they had no calendars such as the elaborate time-keeping devices of the Mayas of Central America.

It seems they had, but did not know it. Recent study of tree growth shows that trees not only register the passing years by their rings; but the contour, thickness, and conformation of these rings indicate climatic changes from year to year. Moreover these changes are cyclic.

Have Story to Tell

"Oh, that they could tell their story!" many a nature lover has exclaimed as he gazed at some tree patriarch which had outlived many generations of human beings. All along the trees could tell their story; but mankind is just learning to read it.

Dr. A. E. Douglas, of the University of Arizona, and the Carnegie Institution, has developed a method which science now recognizes as a trustworthy process of reading tree records of time and climate. Despite the remarkable accomplishments of the National Geographic Society's expeditions to Pueblo Bonito (Beautiful Village) of Chaco Canyon, the leader, Neil M. Judd, admits that no evidence has been found to give a satisfactory answer to the question most often asked, "How old is the ruin?"

Canyon was Human Beehive

Was it 800, or 1,200 A.D., or even longer ago that, looking down from sheer canyon cliffs the Wandering Jew might have seen children at play on the roofs of the giant Pueblo Bonito apartment house (to mention only one) and their elders at work on their garden plots of squash, corn and beans? Or fashioning some of the beautiful pottery or tiny ornaments which resemble earrings of 1922? Or worshiping with elaborate ritual in the cloistered kivas?

Of course there are no thousand-year-old trees among the pines and junipers of New Mexico or Arizona. The oldest ones yet found are from 400 to 500 years old. The question then arises: How bridge the gap between these trees and the span of years represented by the timbers used in the roof supports of Bonito's excellent masonry?

Therein lies the romance of the forthcoming expeditions for which the National Geographic Society has just made a grant of $2,500 a year for three years. The quest has all the mystery of a detective story, the intrigue of a Baconian cipher, yet its working out will furnish valuable fact as well as mental enjoyment.

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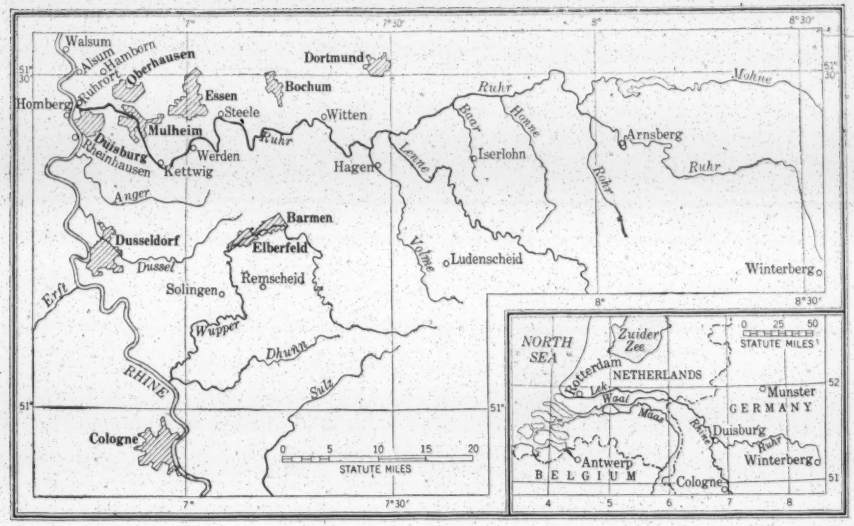
with a population of 137,000, while barely ten miles farther to the east and still short of the eastern limits of the region lies Dortmund with 214,000 inhabitants. It is as though St. Paul, Minn.; Flint, Mich.; Albany and Rochester, N. Y.; Richmond, Va.; Grand Rapids, Mich., and Oakland, Calif., were grouped closely over an area slightly longer and somewhat narrower than Rhode Island, while among them were scattered a dozen or more communities ranging in size from Bismarck, N. Dak., and Aberdeen, Wash., to Austin, Texas, and Chattanooga, Tenn.

In and around practically all of the towns of the Ruhr except those at its gateway are to be found the works of coal mines, while in all are iron and steel plants and numerous other manufacturing establishments. In the cities at the gateway to the Ruhr are centered the banking and transportation facilities for handling the tremendous output of this home of Germany's Tubal-Cains.

Bulletin No. 1, January 15, 1923.



Drawn by James M. Darley. *© National Geographic Society.*

A SKETCH OF THE RUHR BASIN

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Latvia and Two New Words

CZECHOSLOVAKIA has frequently been mentioned as a conspicuous silver lining behind Europe's war clouds; with the coming here of diplomatic representatives from new-born Latvia that country may win recognition as another.

For a small Baltic state, only a little larger than West Virginia, to battle both the Bolshevists and the Prussians out of its borders, then to disarm the Germans in its midst by constitutional means is an achievement. Even allowing for a strategic location and for "breaks" of political luck, Latvia's persistence and Yankee-like ingenuity compel attention.

Latvia and the Letts already are distinctive. According to Dr. Edwin A. Grosvenor's classification of the races of Europe the Letts and Lithuanians stand alone as a separate stem of the great Slav family tree that splits into numerous branches among the Eastern Slavs, the Western Slavs, and the South, or Jugo-Slavs.

Early Allied Recognition

Latvia received its credentials as a nation from the Allied Supreme Council about two years ago. It earned this early recognition as a reward, in part, for allying itself with Poland against Russia, while Esthonia, to the north, made a friendly treaty with the Soviet Government, and Lithuania, to the south, engaged in a dispute with Poland over a boundary question.

Mere mention of these three new states indicates how the Baltic Sea manor has been subdivided into new national building lots. Here where the old Russian and German Empires and Sweden held complacent sway, an assortment of new national neighbors suddenly starts housekeeping—Finland, Esthonia, Latvia, Lithuania, Poland, with its precious corridor to the sea, and the free city of Danzig separating the German republic from West Prussia. Sweden remains, as does Denmark, whose small frontage now becomes important amid such a rapid waterfront development.

Strangely enough giant Russia retains only a right of way—to preserve real estate terminology—and emerges now from Petrograd, through the gulf that separates Esthonia from Finland and bears the latter's name.

Introducing Two New Words

A consideration of Latvia brings two new words into play—words which, like intelligensia, may be missing from many dictionaries, but which go a long way toward explaining important facts about the new republic.

One of these words is "Balt." The word does not refer, as might be suspected, to any indigenous resident of the former Baltic provinces of Russia. Just the opposite. A Balt is a non-Lett, descendent of the Brethren of the Sword, an aptly named band of German merchants who settled along the Gulf of Riga, near the present Latvia capital, Riga, and started in to convert or kill the Letts. Then and there the Letts gave an inkling of their independent temper. They drove out the medieval missionaries, immersed themselves again in the waters

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Detective Methods in History Study

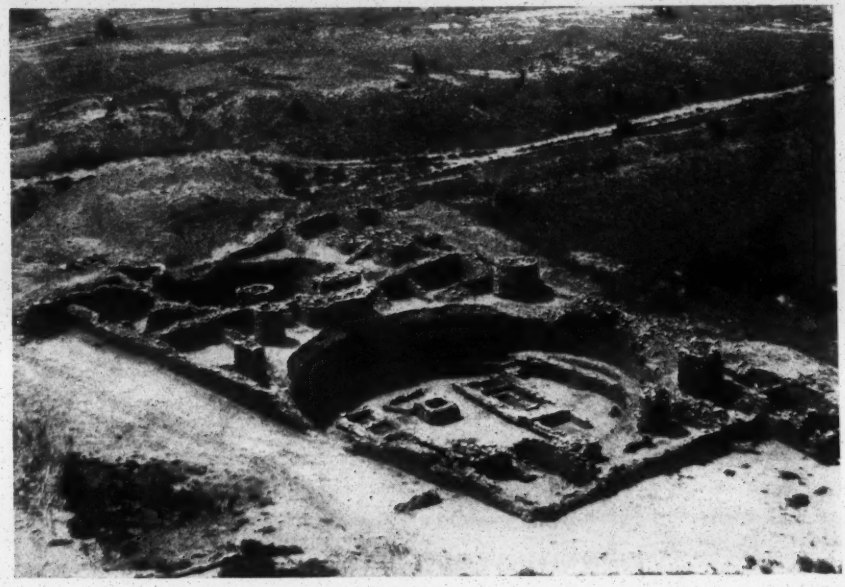
Briefly, the method of study contemplates getting cross sections of the oldest living trees, then obtaining from other pueblos, of more recent supposed date, timbers which overlap the newly-cut trees in time period, then working ever backward with older and older specimens until those are found which correspond, in their cyclic indications, to those of the Chaco Canyon Pueblos.

Walpi and Oraibi, in Arizona, and Zuni, and Acoma, in New Mexico, the last mentioned being the oldest continuously occupied pueblo in the southwest, will be visited in an effort to patch together tree sections which will carry the forest almanac back to dating distance of the far more elaborate Chaco Canyon ruins.

A second line of study will concern itself with a study of buried stumps near Flagstaff, Arizona, and other stumps farther west in recently washed-out valleys. These, too, may furnish records of seasonal changes which will help in fitting together tree diagrams of time.

The National Geographic Society's grant of $2,500 annually for three years to carry on this special phase of study is in addition to the explorations tending further to disclose the life, manners, customs, and remnants of the handiwork of the early American apartment house builders.

Bulletin No. 2, January 15, 1923.



THE GREAT KIVA OF PUEBLO BONITO, WITH ITS SURROUNDING ROOMS, VIEWED FROM THE NORTH CLIFF

This was the most important council chamber or ceremonial room of the Bonitans. The small hollowed square of masonry in the center of the room was the fireplace.

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How Diamonds Are Mined

A "RUSH" such as frontier America knew in its free-land days, but in this case to peg out claims in a newly discovered diamond field was mentioned in recent dispatches from South Africa. This new diamond country opens possibilities of a rival to the great Kimberley diamond field in the same general region, the world's greatest source of the sparkling white gems.

The methods of mining diamonds at Kimberley, which may be followed in the new fields if the formation should prove to be the same, are among the most interesting followed in any mining region of the world.

Like Needle in Haystack

The Kimberley mines are in very ancient volcanoes which ages ago lost all semblance of activity. But during their youth the great heat and pressure of these volcanoes created gigantic laboratories in their depths in which thousands of the hard white carbon crystals, which are diamonds, were created. The precious little lumps are embedded in a great volume of worthless rock known as "blue ground," and under old conditions were as hard to find as the proverbial needle in a haystack. But just as a clever searcher could probably locate his needle with a powerful magnet, despite the straw, so engineers have evolved mechanical means cleverly to separate the few tiny diamonds from the many tons of dirt in which they are hidden.

How well Nature has concealed the crystals is shown by the fact that the "blue ground" brought up from the depths of the mines and carrying its priceless gems, is spread out practically in the open for four months to a year to the weather. The diamonds are perfectly safe, for officials who have walked over the weathering "floors" for many years assert that they have never found a diamond in this way. As the "blue ground" weathers it crumbles, and great harrows like those used on the bonanza farms of the West are dragged over it to facilitate the process.

Gems Trapped in Grease

Eventually the material is broken down into relatively fine particles. It is then taken in truck-loads to the mechanical plant of the mine for treatment. The ground is mixed with water in great mixing machines and passed over screens of fine wire meshing.

When as much as possible of the foreign material has been removed in this way the coarse residue, containing the diamonds, is passed over sloping, quivering tables covered with thick grease. Because of some little understood physical property, diamonds stick to the grease while the worthless material flows over the edge of the tables. The grease with its load of crystals is then scraped into a perforated container and heated by steam. The grease melts away and leaves the small but highly valuable object of these months of work.

How widely spaced the diamonds are in their matrix of earth can be shown best perhaps by a comparison of volumes. The earth taken out in a year by the largest mining company in the field, would form a cube more than 430 feet in

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of the Dvina, where they had been baptized at the point of German swords, and sent the waters back to Germany as evidence that they renounced the new religion.

Then and later Latvia shook off German political control but welcomed economic cooperation of Germans. Riga became a prominent member of the Hanseatic League in the thirteenth century and kept a prominent place in world trade until 1914, when it stood second only to St. Petersburg among Baltic cities in its shipping.

Through the centuries of political seesaw the German merchants in Latvia accomplished what invaders could not achieve. They gained control of the land and thus of the local governments and held a position which has been compared to that of the landed gentry in England of a century ago. This squirearchy of the Baltic comprises the Balts. And so enlightened was their tyranny that when, about the time of our Civil War, the Tsar began to Russify the Baltic Provinces the Letts and their neighbors resisted. They resented the replacement of their feudal barons by Russian bureaucrats.

The other new word which Latvia brings is "Literaten." It applies to the professional men, the writers, artists, doctors and others, a group which lies between the alien noblemen, on the one hand, and the native farmers and laborers, on the other. This class is distinguished from the intelligensia, which word generally connotes something of a reforming and radical spirit, for the Latvia "Literaten," became the conservers of literature, art, music, and ideals of political independence, rather than reformers in any of these fields.

The present position of Lettish music may symbolize, in some degree, Lettish national life. Invariably, visitors are impressed with the musical genius of the people. Critics explain that the Letts have passed the folk song period and are groping toward that stage of creative genius where great compositions may be expected of them.

Bulletin No. 3, January 15. 1923.

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A COTTON MILL ON THE RUHR. (See Bulletin No. 1.)

For some 9½ million spindles like these Germany, in normal times, took some two million bales of American cotton a year.

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Galicia: The Alsace of Poland

"GALICIA? Oh, yes, that's in Spain, or was it the place St. Paul wrote a lot of letters to?"

This answer to a geography examination question hits wide of the mark both times, but Galicia recently has become better known because of disputes with Czechoslovakia and Ukraine, not to mention renewal of the age-old dissension between the Poles and Ruthenians who are about equal numerically among its own population.

Present-day Galicia is a region about the size of North Carolina, with eight times the population of that State, handicapped by its geographical location and immortalized by its history.

Carpathians Unkind to Region

Restored to Poland, Galicia forms the southernmost area of that nation, with Ukraine, Rumania and Czechoslovakia lying along its borders. Nature was not kind to Galicia because the Carpathians, which shield Hungary from the cold Baltic winds, turn their back on Galicia and cut off the warmer breezes of the south. Where a Galician panhandle cuts into Czechoslovakia, round about the little town of Zakopane, rises the High Tatra range to form a happy hunting ground for fisherman, naturalist and excursionist.

For the most part Galicia is a bleak plain. A dense population ekes out a scanty existence from its soil. Before the World War many of its peasants had to leave their families in their primitive thatched huts while they went to Russia for a part of the year to augment their incomes. Yet, while Galicia was a part of Austria, it had more than half the horses of the empire, and manufactured nearly half of the spirituous liquors consumed in Austria.

Austria acquired Galicia upon the first partition of Poland, four years before our Declaration of Independence was signed, and she was comparatively fortunate in her foster mother. While Prussia and Russia ground down the Poles within their domains, denied them their language, literature and political rights, Austria was a benign guardian. Therefore Austrian Galicia became the conservator of Polish national aspirations; and there Poles were free to express their own thoughts in their own tongue. Taxes were burdensome, land was largely in the hands of absentee landlords and had to be worked on smaller shares than anywhere else in Europe, but, withal, the Poles of Galicia were the envy of the Poles in the lands of the Tsar and Kaiser.

Poles Dominated Government

While Galicia escaped political oppression she was in frequent turmoil from political controversy. Only about 45 per cent of her population was Polish; nearly as many were Ruthenians, leaving a balance of power with other nationalities. But the Poles were able to dominate the Galician government entirely and they even provided Austria with a premier at one time, and a foreign minister at another.

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each dimension. This would fill a large city block to a height of more than thirty stories. The diamonds found in this vast amount of earth would fill only two or three desk drawers or a cubical box less than three feet in each dimension. But these few pecks of stones for which a mountain was moved were worth perhaps in excess of $25,000,000.

Laborers Voluntary Exiles

One of the most striking features of the mining of diamonds by the large companies in Kimberley is the existence of the unique labor "compounds." Since diamonds are so easily stolen, only those native laborers are employed who will agree to "enlist" for at least three months and remain for that period (when not in the mines, or on the "floors") within a walled enclosure. In the largest compound, covering more than four acres, 3,000 men live. Not only are these compounds surrounded by high walls, but they are also covered overhead by fine wire netting so that diamonds cannot be thrown outside to confederates.

Laborers entering or leaving a compound must go through a procedure not unlike that when entering a foreign country having strict immigration and custom laws. They must pass a health examination and if diseased are rejected or placed in quarantine. Only certain articles may be taken into a compound, and no boots, shoes or other hard or solid materials may be taken out—only clothing which has been searched. In the largest of the compounds, where some laborers have chosen to stay for years, are stores, a church, a school, a hospital and dispensary, athletic grounds and a swimming pool. The manager of the compound is a sort of mayor and judge rolled into one and is called upon to decide innumerable disputes.

Bulletin No. 4, January 15, 1923.

Note to Teachers

References to articles and pictures in The National Geographic Magazine concerning subjects treated in this Bulletin are given because many teachers wish to employ them for further study or for project and problem assignments. The following is only a partial bibliography extracted from "The Cumulative Index of The National Geographic Magazine" (1899-1922, inclusive). A limited supply of some numbers may be ordered from the Society's offices at the prices named. Those numbers marked with an asterisk (*) are out of print. Bound volumes of The Geographic may be consulted in any public library and in school libraries.

The Story of the Ruhr. By Frederick Simpich. Vol. XLI, pp. 553-564, 12 ills., May, 1922. 50c.

Chaco Canyon: A new National Geographic Society Expedition. Vol. XXXIX, pp. 637-643, 7 ills., June, 1921. 50c.

The Pueblo Bonito Expedition of the National Geographic Society. By Neil M. Judd. Vol. XLI., pp. 323-332, March, 1922. (*)

Poles and Ruthenians: The Races of Europe. By Edwin A. Grosvenor, L.H.D., LL.D. Vol. XXXIV, pp. 441-533, 62 ills., 2 page maps, 1 insert, Dec., 1918. (*)

The Diamond Mines of South Africa. By Gardiner F. Williams. Vol. XVII, pp. 344-356, 11 ills., June, 1906. (*)

Map of the New Africa, showing areas on that continent affected by the treaty of Versailles, also remarkable railway development, may be had from the Society's headquarters while supply lasts, mounted on linen. $1.50.

Russia: For extensive bibliography of articles consult "Cumulative Index of the Geographic Magazine" in your school library. Copies may be had from the Society's headquarters, 200 pages, size of The Magazine; cloth, $1.50; postpaid in U. S. A.

Though more than three-fourths of Galicia's eight and a quarter million people get their living direct from the soil, the region has two important minerals, petroleum and salt, and, in lesser quantity, iron and coal. The salt mines at Wicliczka are unique. They have been worked for seven centuries, at least. Statuary, crucifixes, and even a miniature cathedral were hewn out of the rock salt by pious workmen of centuries ago. Ponies born blind draw little cars over a tiny railway. Ferry boats navigate lakes in the mines. The damp salt atmosphere shortens the lives of the workers, yet their pre-war wage was the equivalent of about twenty cents a day.

A Unique Memorial

Galicia has a memorial as distinctive as the Washington Monument. From every battlefield consecrated by Polish blood, and from every settlement of Poles all over the world, reverent hands brought earth which was heaped upon a huge mound at Kosciuskoberg, near Krakow. Austria transformed the mound into a fort.

Krakow clusters with memories of Poland's ancient luster. There the royal palace still stands, used by the Austrians as a barracks. There sleep Jagellons and Kosciuszko. Lemberg, the newer seat of Galician government, is a more modern city. Its name may be more familiar to American ears, as is that of the all but unpronounceable Przemysl, because these cities were the successful objectives of General von Mackensen's thrust in 1915, ten weeks after the Russian army had driven the Austrians out of Przemysl.

Bulletin No. 5, January 15, 1923.

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A HOPI "UNIVERSITY" AT WALPI (See Bulletin No. 2.)

A tribal leader is giving a younger Indian a lesson in agriculture. Garfield's ideal of Mark Hopkins on one end of a log, with himself on the other, is fulfilled by these red men.